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OCA PAD AMENDMENT - PROJECT HEADER INFORMATION

02/01/89

Active

Project #: E-18-524
Center # : 05044-2A0

Cost share #:
Center shr #:

Rev #: 4
OCA file #:
Work type : INST
Document : GRANT
Contract entity: GIT

Contract#: 5 T32 DE07053-12
Prime #:

Mod #: DEL SCH 890201

Subprojects ? : N
Main project #:

Project unit: MAT ENG
Project director(s):
HOCHMAN R F MAT ENG

Unit code: 02.010.112
(404)894-2879

Sponsor/division names: DHHS/PHS/NIH
Sponsor/division codes: 108

/ NATL INSTITUTES OF HEALTH
/ 001

Award period: 880701 to 890630 (performance) 890930 (reports)

Sponsor amount	New this change	Total to date
Contract value	0.00	65,798.00
Funded	0.00	65,798.00
Cost sharing amount		0.00

Does subcontracting plan apply ? : N

Title: PREDOCTORAL TRAINING IN DENTAL MATERIALS SCIENCE (NIDR TRAINING GRANT)

PROJECT ADMINISTRATION DATA

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Sponsor technical contact

Sponsor issuing office

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Security class (U,C,S,TS) :
Defense priority rating :
Equipment title vests with: Sponsor
NONE AUTHORIZED

ONR resident rep. is ACO (Y/N): N
supplemental sheet
GIT

Administrative comments -

REVISION ISSUED TO ADD DELIVERABLE SCHEDULE WHICH WAS INADVERTANTLY
UPON INITIATION.



GEORGIA INSTITUTE OF TECHNOLOGY
OFFICE OF CONTRACT ADMINISTRATION

Date 2/10/89

Project No. E-18-524

Center No. 05044-2A0

Project Director R.F. Hochman

School/Lab Mat. Eng.

Sponsor DHHS/PHS/NIH

Contract/Grant No. 5 T32 DE07053-12

GTRC GIT XX

Prime Contract No. _____

Title Predoctoral Training in Dental Materials Science (NDIR Training Grant)

Effective Completion Date *6/30/89 (Performance) 6/30/89 (Reports)

Closeout Actions Required:

None
☒ Final Invoice or Copy of Last Invoice
☒ Final Report of Inventions and/or Subcontracts - 568 sent to P/I.
 Government Property Inventory & Related Certificate
 Classified Material Certificate
 Release and Assignment
 Other

Includes Subproject No(s). _____

Subproject Under Main Project No. _____

Continues Project No. E-18-515 Continued by Project No. _____

Distribution:

X Project Director
X Administrative Network
X Accounting
X Procurement/GTRI Supply Services
X Research Property Management
 Research Security Services

X Reports Coordinator (OCA)
X GTRC
X Project File
X Contract Support Division (OCA) (2)
Other

SECTION IV PROGRESS REPORT SUMMARY		GRANT NUMBER 5 T32 DE07053-13	
PRINCIPAL INVESTIGATOR OR PROGRAM DIRECTOR Dr. Robert F. Hochman		PERIOD COVERED BY THIS REPORT	
APPLICANT ORGANIZATION School of Materials Engineering, Georgia Inst. of Tech.		FROM Feb. 1, 1988	THROUGH Feb. 1, 1989
TITLE OF PROJECT (Repeat title shown in item 1 on first page) Postdoctoral-Predoctoral Training in Dental Materials Science (NIDR Training Grant)			
(SEE INSTRUCTIONS)			

1. Program Objectives

The program can be best summarized in the following short statement of training objectives:

- Strong academic and laboratory instruction in fundamental state-of-the-art materials research.
- Effective supplemental training through seminars, short courses and special laboratory instruction in specialized or advanced materials research areas.
- Continuing interaction with the Emory and University of Georgia Dental Schools as well as practicing dentists on their problems and requirements.
- Develop a basic research problem or theses study for each trainee to utilize a broad range of knowledge and techniques on a problem than can relate to dental materials.
- Arrange special dental orientation program for nondental trainees to simulate and challenge their interests in the field.

2. Trainee Related Expenses

A rather minimal amount of trainee related expenses on this program (\$4,000) were used to principally support the program by providing services, a small amount of secretarial support, a small amount of travel to defray partial expenses to programs related to new developments in materials which have applicability in the area of dental biomaterials and, finally, a small amount of materials and supplies category were purchased on the program.

A major consideration in reviewing the small amount of overhead as well as the allowable trainee related expenses is that it falls far below the financial requirements necessary for one year's support of a trainee. Calculations of staff time, materials, supplies, equipment, etc. have shown that at the PhD candidate trainee level, support in excess of \$30,000 per year is needed. Therefore, this relatively small level of trainee related expenses falls far short of providing the academic staff time (preceptors time) and support for the student trainee. The combination of the 8% overhead allowance, trainee tuition and fees and travel money fall \$15,000 to \$20,000 short for each trainee per year. Therefore, it is very important that in this type of training that NIDR, and NIH as a whole, consider raising the training related expenses.

3. Trainee List

James E. Thayer - October 1, 1987 to May 31, 1988.

Melissa Wert - March 1, 1988 to June 30, 1988.

Ms. Wert's studies have been in basic composite development, particularly characterization of failure in carbon fiber - methyl methacrylate composites. The potential is these materials in oral implants and bone reconstructive needs to be evaluated. They appear to have very good bio-compatibility (better

Melissa Wert (Continuation)

than metals), mechanical strength, relatively low lightness. Hence, Ms. Wert's work was to initiate evaluation of their potential.

David Timmis, D.D.S. - May 1, 1988 to Present.

Dr. Timmis desired to learn more about materials in relation to his future development as an oral surgeon. His program consisted of studying introductory materials engineering courses and developing cooperation with Dr. Hochman in looking at materials for mandibular implants. This consisted of study of polymers as well as surface modified metals for increased wear and reduced friction of the mandibular joint. A joint proposal for funding by the Tech-Emory bioengineering program is being submitted from this work.

Melissa Rathburn, D.D.S. - July 1, 1988 to Present.

Dr. Rathburn initiated a postdoctoral program to learn more about materials for her development of better orthodontic procedures. Her program consists of materials engineering courses and developing a research program with Dr. Hochman. The fastening of ceramic posts in orthodontic procedures has resulted in difficult removal. The research is centered on a fastening system which will provide a strong bond but will allow for easier removal without harm to the tooth.

4. Summary of Research Training

Mr. Jim Thayer was involved at the beginning of a program to evaluate fatigue characteristics of ion implanted and ion plated surfaces. The reason for this study was to improve fatigue and implantation characteristics of various dental-medical implants and particularly to try and develop a three unit implant which will have bone compatibility, soft tissue compatibility and adhesion, and finally a strong exterior post area with good mechanical properties. This work is in its initial stages and unfortunately Mr. Thayer was not able to pass the PhD Qualification Tests and has withdrawn.

5. Continuation Program Development

In the two and one-half years, cooperation with Dr. Roland Arnold at Emory University Dental School has led to potential programs to develop closer inter-relationship in a number of areas. The preceptor of this program has served on committees to interview potential candidates for new positions that relate to prosthetic materials in the Emory dental program. These programs have led to development of cooperation and an inter-university program which hopefully will develop new and improved research programs. At the present time, we are developing potential DDS who might have an interest in a postdoctoral materials research program, for example, Ms. Rathburn, D.D.S., and Mr. Timmis, D.D.S., are trainees with this in mind.